

Astronomy: Earth & Moon



Unit Introduction

This course will be mainly focused on the study of the Earth and moon, as well as space exploration. The course is designed to enable students to utilize their creative thinking skills to analyze and solve problems as well as interpret a variety of information so as to form a consistent theoretical framework in which to comprehend the Earth-moon system. Students will learn about the relationship between the Earth and moon, the nature of gravity, and the history of space exploration.

Unit Priority Standards

- **MS-ESS1-1.** Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
- **MS-ESS1-2.** Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

Unit Transfer Goals

- Using and developing scientific models to explain laws, theories, natural phenomena, and original ideas.
- The ability to engineer and design solutions and use technology to simplify problems and create solutions to specific problems.

Unit Essential questions	
<ol style="list-style-type: none">1. What is the relationship between the Earth and moon?2. What are the effects of gravity and how does it operate in our lives?3. How do scientists explore and investigate outer space?	
Acquisition of Knowledge Skill	
<i>Students will know...</i> <ol style="list-style-type: none">1. That gravity affects all objects on the surface of the Earth and in space.2. The relationship between the Earth and the moon.3. The history of space exploration.	<i>Students will be skilled at...I can...</i> <ol style="list-style-type: none">1. Explaining how phenomena in space affect our lives on Earth.2. Simulating the effects of gravity.3. Identifying the phases and effects of the moon.4. Researching the history of space exploration.

Unit Plan

Week 1: Dates 1/25-27	Dropbox/Checklist of EQs <input type="checkbox"/> What is the relationship between the Earth and moon?
Learning Target(s):	Checklist of Skills <input type="checkbox"/> Explaining how phenomena in space affect our lives on Earth.
Acquired Knowledge:	Dropbox/Checklist of Knowledge <input type="checkbox"/> The relationship between the Earth and the moon.
Skills, Activities, and Due Dates:	<ul style="list-style-type: none"> - Earth in Space Workbook - Gravity & Motion Section Assessment
Week 2: Dates 1/30-2/3	Dropbox/Checklist of EQs <input type="checkbox"/> What are the effects of gravity and how does it operate in our lives?
Learning Target(s):	Checklist of Skills <input type="checkbox"/> Simulating the effects of gravity. <input type="checkbox"/> Identifying the phases and effects of the moon.
Acquired Knowledge:	Dropbox/Checklist of Knowledge <input type="checkbox"/> That gravity affects all objects on the surface of the Earth and in space. <input type="checkbox"/> The relationship between the Earth and the moon.
Skills, Activities, and Due Dates:	<ul style="list-style-type: none"> - Gravity Simulation Lab - Lunar Phases worksheet - Space Mission Presentation Research
Week 3: Dates 2/6-10	Dropbox/Checklist of EQs <input type="checkbox"/> What is the relationship between the Earth and moon?
Learning Target(s):	Checklist of Skills <input type="checkbox"/> Researching the history of space exploration.
Acquired Knowledge:	Dropbox/Checklist of Knowledge <input type="checkbox"/> The history of space exploration.
Skills, Activities, and Due Dates:	<ul style="list-style-type: none"> - Moon Landing Hoax Video - Science of Rockets Section Assessment - Project Workday

Week 4: Dates 2/14-17	Dropbox/Checklist of EQs <input type="checkbox"/> How do scientists explore and investigate outer space?
Skills, Activities, and Due Dates:	<ul style="list-style-type: none"> - Project Workday - Presentation - Quiz

Assessment Details

Evidence	
I will check students' understanding throughout the unit by...	
Summative Project <ul style="list-style-type: none"> • Space Mission Presentation • Standards Aligned Linked Rubric Quiz <ul style="list-style-type: none"> • One quiz consisting of a mixture of multiple choice and long answer questions will be given at the end of the unit to assess learning outcomes. • Quizlet: Student knowledge of scientific vocabulary will be occasionally reviewed to ensure they are on track. Labs <ul style="list-style-type: none"> • Students will have the opportunity to test out new concepts with hands-on learning activities. These will be assessed based on quality of observations and/or analysis of data and conclusions. 	Formative <ul style="list-style-type: none"> • Class Work <ul style="list-style-type: none"> • Section Assessments: Certain course content will be summarized and reviewed so as to build up student confidence and reinforce core concepts. • Newsela: Students will be assigned articles to read in association with specific class content. • Workbook: Students will complete assigned pages for content review. Portfolio <ul style="list-style-type: none"> • Digital Portfolio: Students will maintain a digital portfolio where they keep record of projects and other activities.